James Fitzgippon

Movable BARRIER ... CAPABILITY DES ... DES . #3 AUG 1 2 2002 COPY CARRIED ORIGINALLY FILED 1/25 139B 390-390-<u>ಹ</u> 490 490 49B 48~ FIG. 1

et 296251 4/25 FIG. 3B +5\ 280 282 284 +5V \Diamond 82 270 +5V Ą,⊦ +5V 0 120F VCC 120A P10 P17 P11 P16 /A0 P15 /D0 P14 92 R//W P13 /RESET P12 **♦**+5V P33 P25 87 P32 **P24 VDD** CS OSC₂ P04 OSC₁ CLK MC2 P05 P31 P24 MC₁ DI P03 **P23** 84 **P26** DO **P22 P27 P36** GND **P35** P01 W ₩ **P07 P00** ₩ P06 P02 W 88 **P37** P21 P30 P20 **GND** 120B 136 130 76 +5V 74 150 ∆^{+24V} 146 142 144 OUT IN 138 COM 1401 152 154

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/137,580Docket No. 72928/5569

Kenneth H. Banketello. 73896/5 (\$2) 577-7000 Kenneth H. Samples

(312) 577-7000



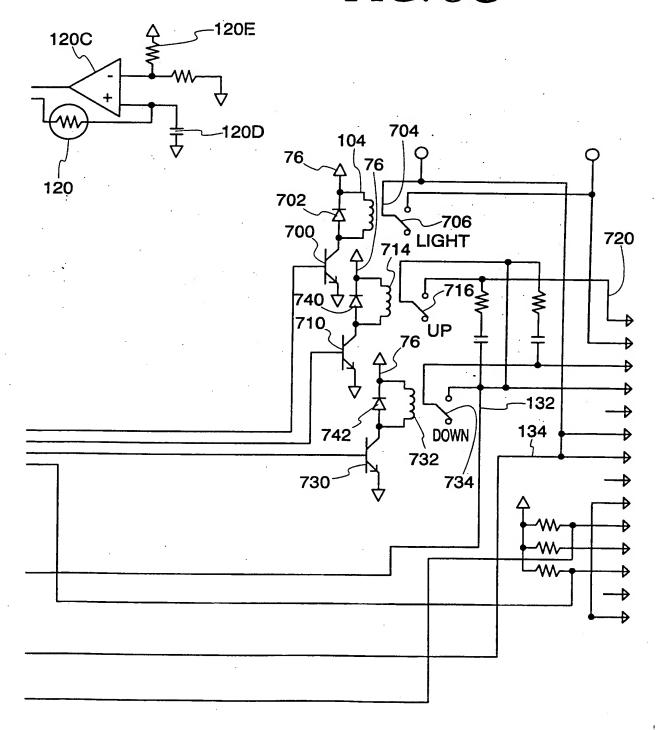
COPY OF PAPERS ORIGINALLY FILED

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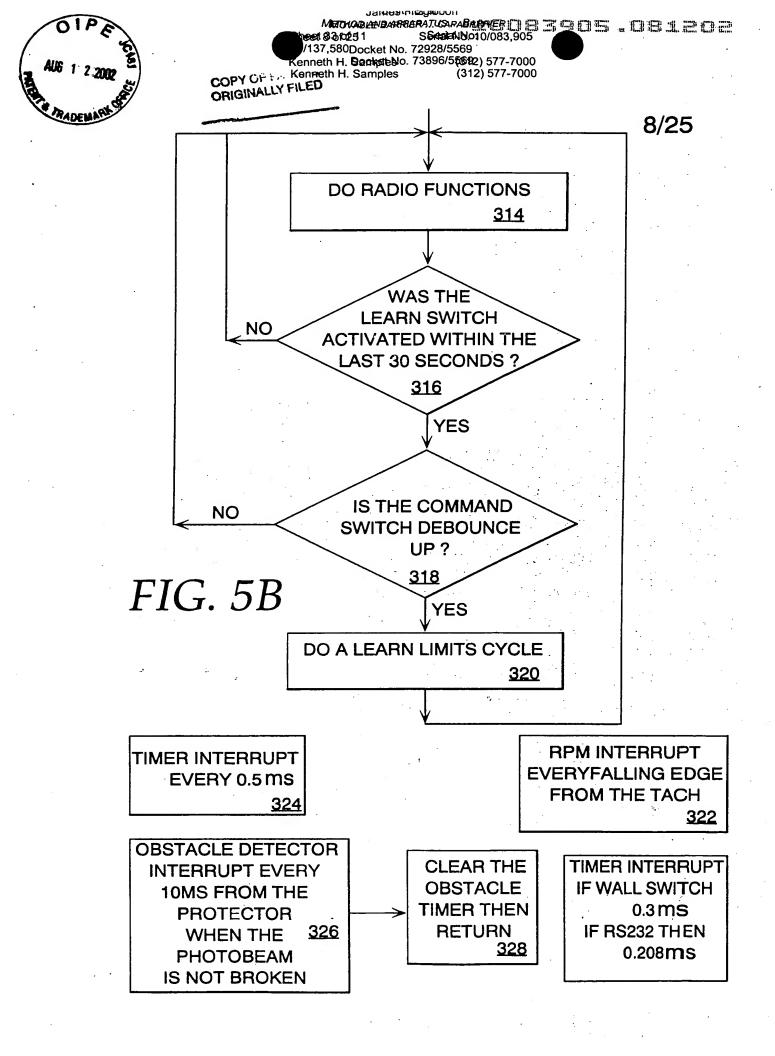
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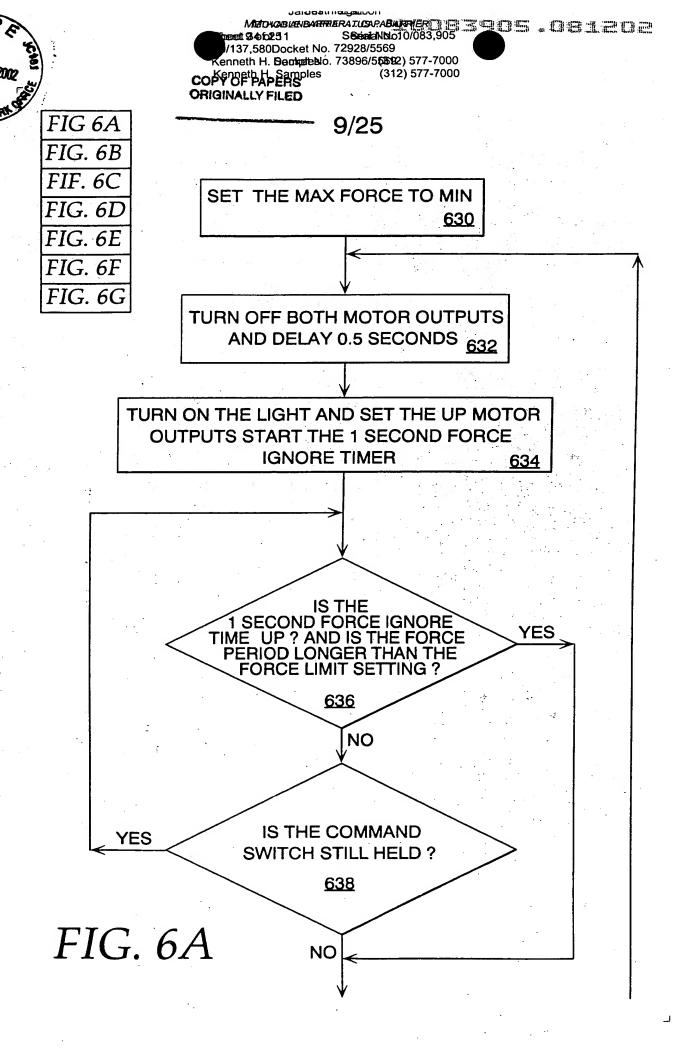
FIG. 3A FIG. 3B FIG. 3C

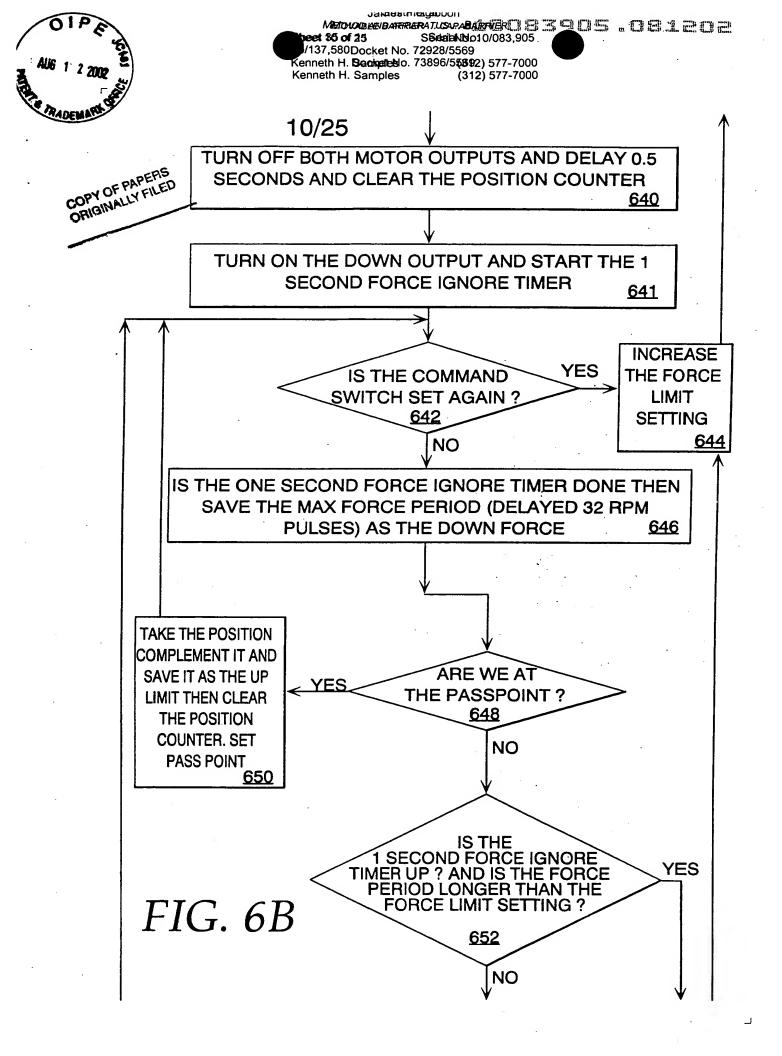
FIG. 3C

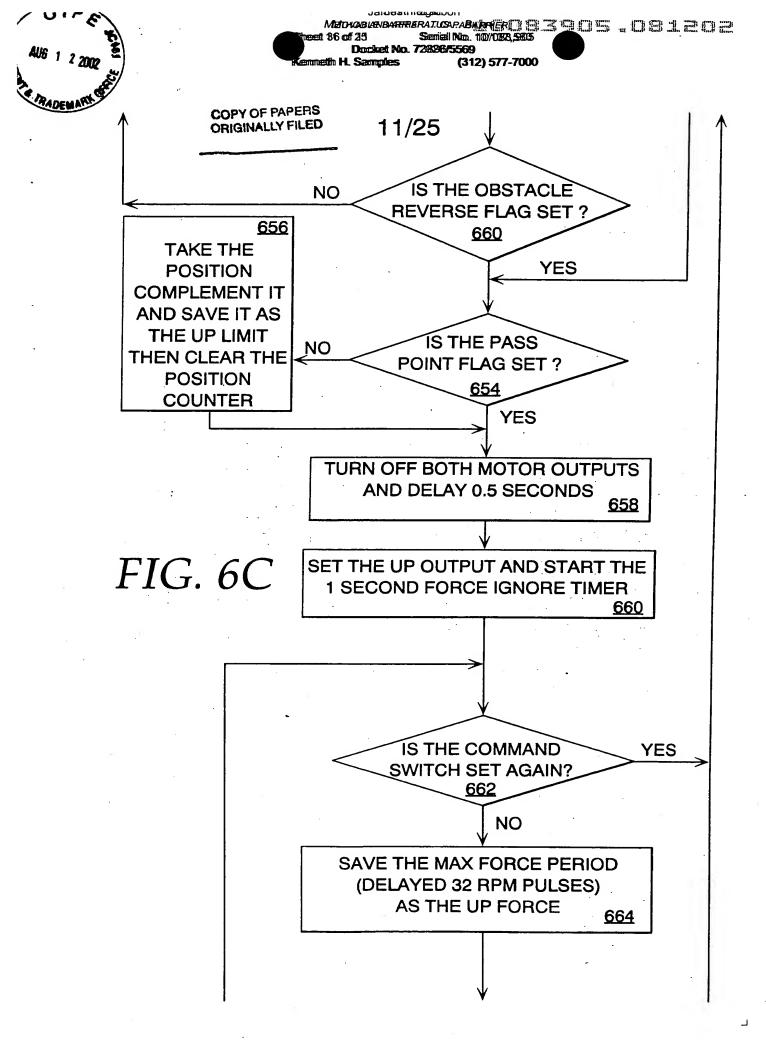


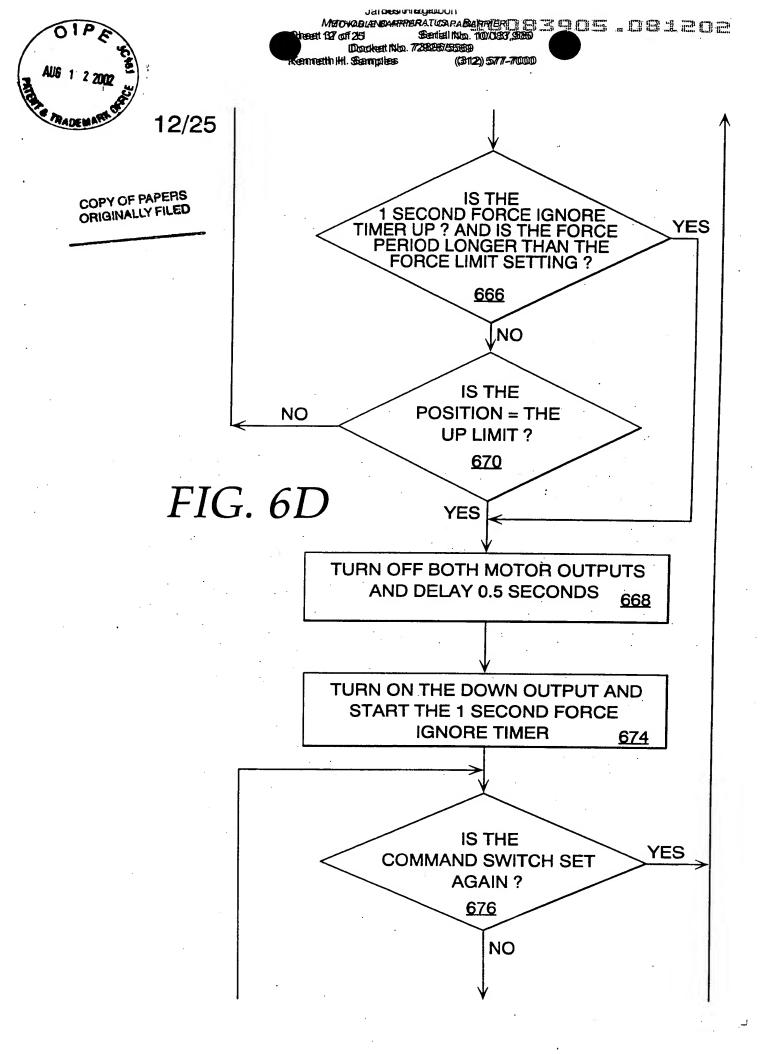
eet 826251 /137,580Docket No. 72928/5569 enneth H. Benteletio. 73896/55592) 577-7000 AUG 1 2 2002 Kenneth H. Samples (312) 577-7000 7/25 COPY OF PAPERS ORIGINALLY FILED POWER ON RESET **CLEAR ALL MEMORY AND** TEST CHECKSUM OF ROM FIG 5A IS THE CHECKSUM AND THE NO **MEMORY CORRECT?** FIG 5A 302 YES FIG 5B WHAT WAS THE LAST NONVOL SAVE LAST STATE DOWN LIMIT LAST STATE UP LIMIT OF THE STATE OF THE **OPERATOR?** 304 LAST STATE SOMEWHERE IN THE MIDDLE SET THE POSITION SET THE POSITION SET THE POSITION AS THE DOWN LIMIT AS OUTSIDE OF NORMAL AS THE UP LIMIT VALUE AND SET THE RANGE 6 INCHES BELOW VALUE AND SET THE WINDOW FLAG. SET THE SECONDARY UP LIMIT. WINDOW FLAG. THE OPERATION STATE SET THE OPERATION SET THE OPERATION **AS DOWN LIMIT** STATE AS STOPPED STATE AS UP LIMIT 306 <u>308</u> READ THE MOTOR TEMPERATURE FROM THE NONVOL. READ THE PC BOARD TEMPERATURE FROM THE CIRCUIT AND IF IT IS GREATER THAN THE TEMPERATURE READ FROM THE NONVOL SET THE PCB TEMPERATURE AS THE MOTOR TEMPERATURE. 312











MOVABLE BARRIER ... CAPABILITY OF SQUEET 15 of 25 Serial No. 10/083,905
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NO

TURN OFF THE MOTOR OUTPUTS. STORE ALL DATA INTO THE NONVOL MEMORY AND RETURN.
698

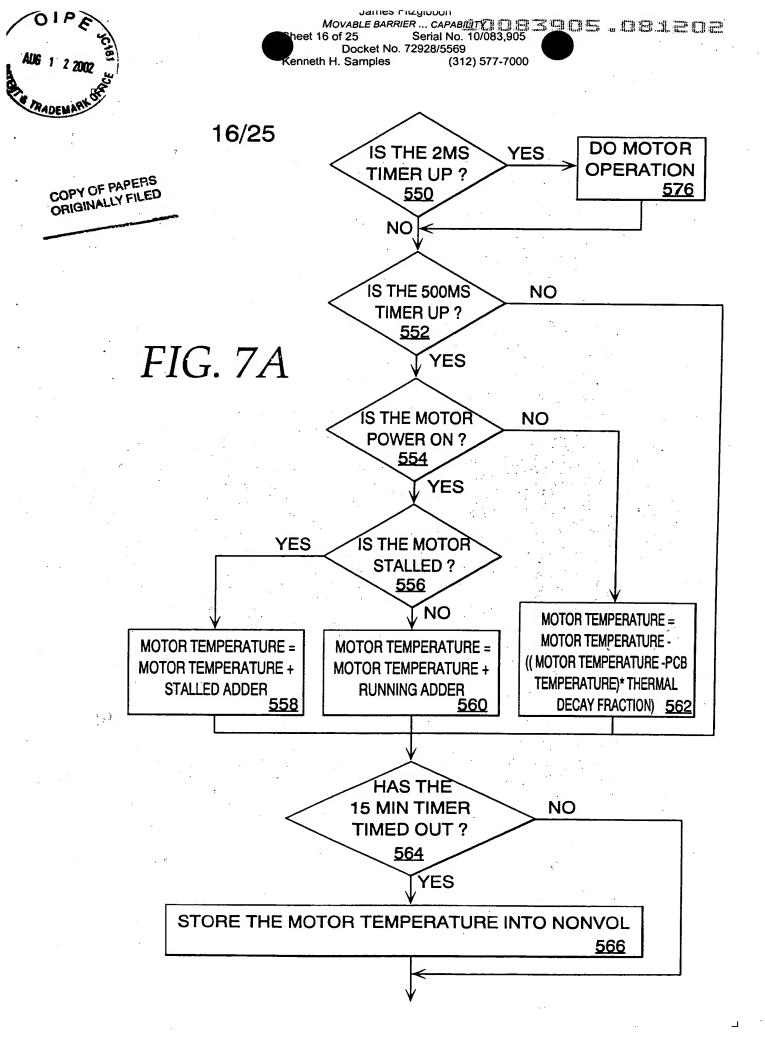
YES

IS THE

POSITION = THE UP LIMIT POSITION ? 697

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FIG. 6G



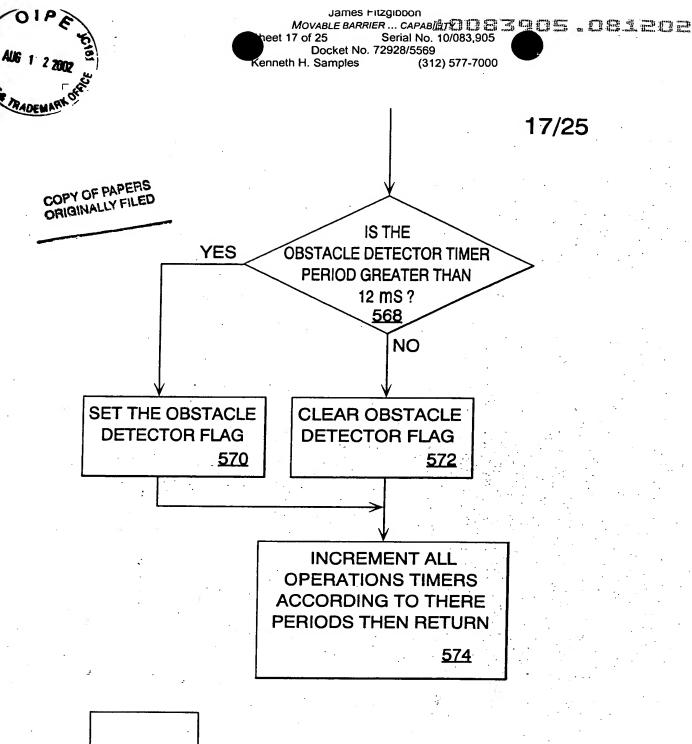


FIG. 7A

FIG. 7B

FIG. 7B

James Fitzgibbon MOVABLE BARRIER ... CAPABIND DB 3 2 0 5 .. DB 1 2 0 2 eet 18 of 25 Serial No. 10/083,905 Docket No. 72928/5569 Kenneth H. Samples (312) 577-7000 FIG. 8A 18/25 WHAT IS THE COPY OF PAPERS ORIGINALLY FILED PRESENT OPERATION STATE? AUTOREVERSE **UP TRAVEL** 580 AT DOWN STOPPED IN DELAY LIMIT MID TRAVEL AT UP LIMIT DOWN TRAVEL IF THERE IS A COMMAND A COMMAND A COMMAND A COMMAND A COMMAND A COMMAND FROM THE FROM THE FROM THE FROM THE FROM THE FROM THE **RADIO RADIO** RADIO RADIO RADIO **RADIO** OR WALL OR WALL OR WALL OR WALL OR WALL OR WALL CONTROL **CONTROL** CONTROL CONTROL CONTROL CONTROL SET THE SET THE AND THE MOTOR SET THE AND THE MOTOR AND THE MOTOR STATE STATE TEMPERATURE STATE AS **TEMPERATURE TEMPERATURE** AS STOPPED AS STOPPED IS BELOW THE **AUTOREVERSE** IS BELOW THE IS BELOW THE IN MID TRAVEL IN MID TRAVEL DOWN TRAVEL AND CLEAR THE UP TRAVEL DOWN TRAVEL 582 588 THRESHOLD **AUTOREVERSE** THRESHOLD THRESHOLD THEN SET THE TIMER THEN SET THE THEN SET THE STATE AS 600 STATE AS STATE AS DOWN TRAVEL **UP TRAVEL** DOWN TRAVEL IF THE FORCE IF THE 0.5 IF NOT DONE **PERIOD IS** IF NOT DONE IF THE FORCE 614 SECOND DUE TO DUE TO LONGER **PERIOD IS** TIMER IS **TEMPERATURE TEMPERATURE** THAN THE LONGER **UP SET THE OUTPUT** OUTPUT **UP ARRAY** THAN THE STATE AS DIAGNOSTIC DIAGNOSTIC **VALUE FOR DOWN ARRAY** UP TRAVEL. CODE CODE THIS POSITION **VALUE FOR** <u>596</u> **610** SET THE STATE THIS POSITION 584 AS STOPPED SET THE STATE IN MID TRAVEL AS **590 AUTOREVERSE** STARTING THE **AUTOREVERSE** TIMER RETURN RETURN RETURN 602 RETURN <u>616</u> <u>586</u> 598 612

James Fitzgibbon f 25 Serial No. 10/083,905 Docket No. 72928/5569 eet 19 of 25 Kenneth H. Samples (312) 577-7000 19/25 IF THE IF THE COPY OF PAPERS POSITION = POSITION = ORIGINALLY FILED **UP LIMIT OR** THE DOWN POSITION = LIMIT **POSITION AND SECONDARY** THE PASS **UP LIMIT POSITION POINT IS SEEN** THEN SET THE SET THE STATE STATE AS DOWN LIMIT **AS UP LIMIT** 604 592 IF THE POSITION = THE DOWN **RETURN** LIMIT **POSITION AND** <u>594</u> THE PASS POINT IS NOT SEEN SET THE STATE AS FIG. 8B **AUTOREVERSE** AND START THE **AUTOREVERSE** TIMER 606 FIG. 8A **RETURN** FIG. 8B 608

James Fitzgibbon MOVABLE BARRIER ... CAPABLIKE OB 3905 .. OB 1202 Serial No. 10/083,905 eet 20 of 25 Docket No. 72928/5569 Kenneth H. Samples (312) 577-7000 20/25 MEASURE PERIOD FROM LAST PULSE TO THIS PULSE AND SAVE AS FORCE PERIOD 800 COPY OF PAPERS ORIGINALLY FILED FRAVEL DOWN TRAVEL UP WHAT IS DOWN LIMIT **UP LIMIT AUTOREVERSE** STOPPED IN MID TRAVEL THE OPERATOR DOING? 802 **INCREMENT THE** DECREMENT THE **POSITION COUNTER POSITION COUNTER** 804 806 HAS THE IS THE /ES YES MAX PATTERN TIME PATTERN TESTING **EXPIRED?** FLAG SET? <u>808</u> 810 SET THE NO NÒ **OBSTACLE REVERSE** FLAG AND IS THE YES RETURN 820 **OBSTACLE FLAG SET?** HAS THE 812 BLOCKAGE OPEN PATTERN NO BEEN SEEN WITH THE NO **CORRECT TIMINGS? SET FLAG** 822 RETURN FOR TESTING RETURN <u>824</u> YES **PATTERN** 814 AND RETURN IS THE <u>816</u> NO WINDOW FLAG SET? 826 YES FIG. 9A

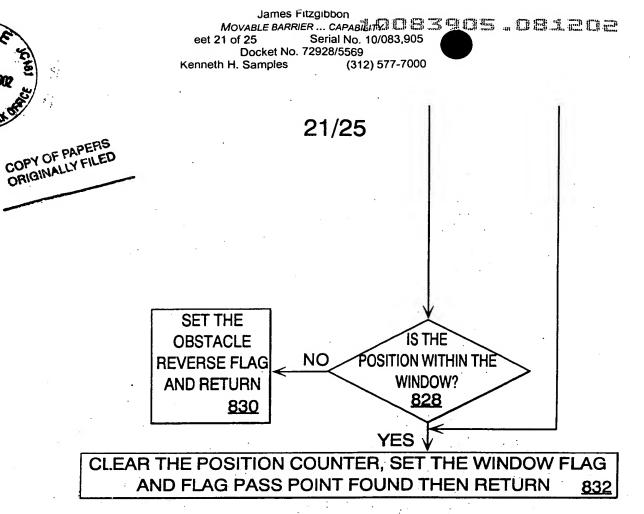


FIG. 9B

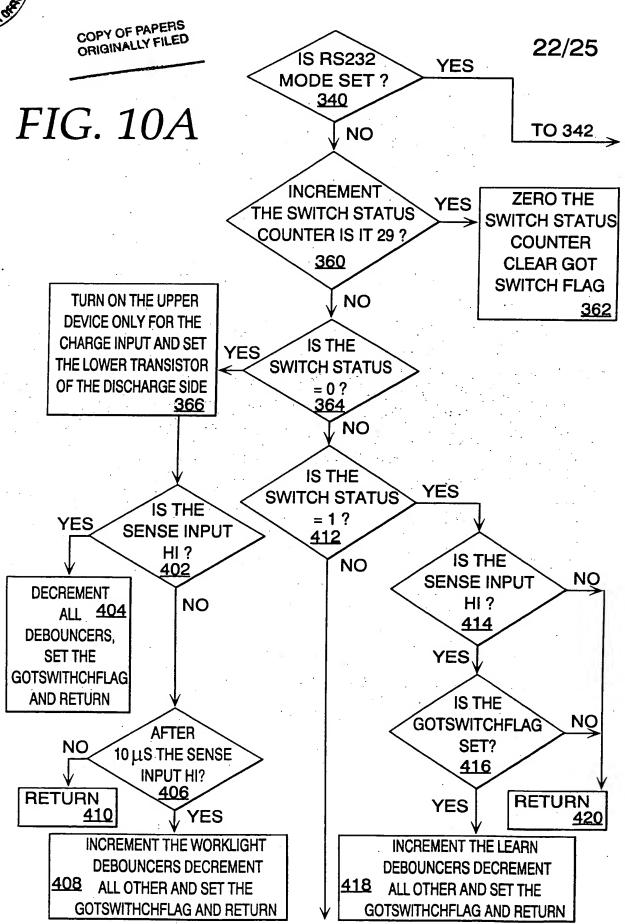
FIG. 9A FIG. 9B James Fitzgibbon

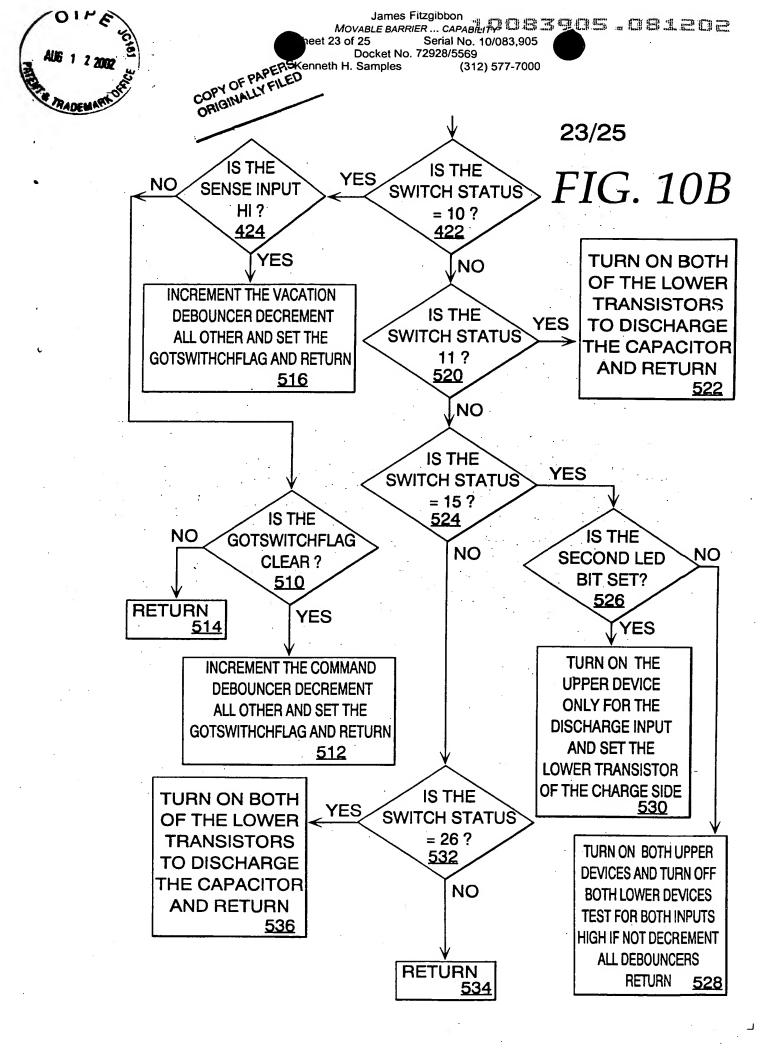
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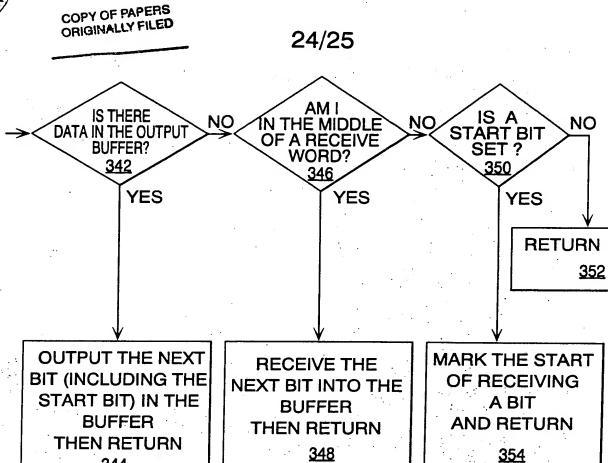


FIG. 10C

FIG. 10A FIG. 10C

FIG. 10B

<u>344</u>



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